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10/562,554	12/28/2005	Hidekazu Mori	4670-0114PUS1	8229
2292 7590 01/31/2011 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
PARENDO, KEVIN A				
ART UNIT		PAPER NUMBER		
2823				
NOTIFICATION DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/562,554

**Applicant(s)**

MORI ET AL.

**Examiner**

Kevin Parendo

**Art Unit**

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 1/6/11
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 1/6/11 has been entered.

Because a new copy of the claims has not been submitted with the RCE, it is assumed that the claims stand as filed with the submission of 8/6/10.

2. The indicated allowability of claims 1-2 and 4-9 is withdrawn in view of the newly discovered references (i.e. the translations filed on 1/6/11). Rejections based on the newly cited references follow.

### ***Information Disclosure Statement***

3. The entries on the 1/3/11 IDS have been crossed out, as they are repeated on the 1/6/11 IDS. Redundancies thus have been eliminated.

### ***Claim Objections***

4. Claim 1 is objected to because the limitations "there is a solids content of 50% or more by weight" on lines 10 and 17-18 are confusing, because the grammar is not standard English. It is also not clear what total weight the percentage refers to - is it just the weight of the particulate elastomer and the carbonaceous material, or of those two materials and the non-liquid components of the powdery mixture? To solve these issues, it is recommended to amend the claim by making the following changes (that were agreed upon on 9/24/10 in the event of an examiner's amendment):

- In claim 1, at line 3, **delete** "mixture" and **insert** – mixture, the powdery mixture comprising at least the particulate elastomer and the carbonaceous material as solids -- after "powdery".
- In claim 1, at line 10, **delete** "there is a concentration of solids content of 50% or more by weight" and **insert** – a concentration of solid contents of the powdery mixture is 50% or more by weight, based on a total weight of the powdery mixture -- after "in a powdery form, ".
- In claim 1, at lines 17-18, **delete** "there is a concentration of solids content of 50% or more by weight" and **insert** – the concentration of the solid contents of the powdery mixture is 50% or more by weight, based on the total weight of the powdery mixture -- after "powdery mixture, ".

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The examination guidelines for determining obviousness under 35 U.S.C. 103 are described in MPEP 2141-2145.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-2, 4, 7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-162794 ("Yoshika"; see applicant-submitted translation entered 1/6/11).

**Re claim 1**, Yoshika discloses a method for producing an electrode (paragraph 1) for an electric double layer capacitor (paragraph 1), comprising: a step of mixing a particulate elastomer ("specific copolymer", see paragraph 5) with a carbonaceous material ("activated carbon", see paragraph 15) to obtain a powdery mixture; wherein

- the particulate elastomer is selected from the group consisting of polybutadiene modified with a carboxyl group, polyisoprene modified with the carboxyl group and styrene/butadiene copolymer (styrene/butadiene is disclosed in paragraph 5, wherein (a) consists of styrene and (b) consists of, for example, 1,3-butadiene, and wherein they form a "copolymer")

modified with the carboxyl group (the copolymer is combined with ethyleneic-unsaturated-carboxylic-acid units, see paragraph 4),

- the carbonaceous material comprises activated carbon as an active material ("activated carbon", see paragraph 15), and
- at the time of mixing the particulate elastomer and the carbonaceous material with each other in a powdery form, there is a concentration of solids content of 50% or more by weight (the electrode composition is that of 100 parts by weight of activated carbon and 0.1-20 parts by weight of the binder; the solid concentration of the binder is between 20 and 65%, see paragraph 11, and activated carbon is 100% solid; thus, the highest concentration of solids occurs when 65% of the binder is solid and .1 parts by weight of the binder are added, for a concentration of  $(100 + (.65 * .1)) / (100 + .1) = 99.9\%$ ; the lowest total solid concentration occurs when 20% of the binder is a solid and 20 parts of the binder are added, for a concentration of  $(100 + (.2 * 20)) / (100 + 20) = 87\%$ ) and
- a step of dry-forming ("roll method", see paragraph 17) said powdery mixture to form an electrode layer,
- wherein the powdery mixture comprises 2 to 10 parts by weight of the particulate elastomer per 100 parts by weight of a combination of the particulate elastomer and the carbonaceous material (0.5 to 10 parts by weight of the binder, i.e. the "powdery mixture", are added to 100 parts by weight of the activated carbon, see paragraph 16; this overlaps the

- claimed range, and there is nothing of record indicating that slightly making the range of Yoshika smaller is nonobvious; see below), and
- at the time of dry-forming the powdery mixture, there is a concentration of solids content of 50% or more by weight (after the powdery mixture is formed, as discussed in paragraph 16, this mixture is formed into an electrode by, e.g. a reverse roll method, see paragraph 17; then, a drying may be performed at 150 degrees; because no drying is disclosed before the forming of the powdery mixture into an electrode, and no time for evaporation of the water components is disclosed, it is logical that the solid contents have the same concentration at the time of dry-forming as they do at the time of mixing).

Regarding the claimed values of parts by weight of the particulate elastomer, the Applicant has not disclosed that the claimed values are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, which are criteria that have been held to be necessary for mere dimensional limitations to be prima facie unobvious. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the claimed values to the invention, because such a value would have been discovered during routine experimentation and optimization. See, for example, MPEP 2144.03, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

**Re claim 2**, Yoshika further discloses that the particulate elastomer is an elastomer having a crosslinked structure (it comprises styrene and butadiene in a copolymer structure, see paragraph 5; this is discussed in the applicants' specification as comprising a crosslinked structure, see paragraph 28; the structure of the copolymer is merely a physical property dependent on its constituent materials, so it must be crosslinked in Yoshika, as well).

**Re claim 4**, Yoshika further discloses that the carbonaceous material further comprises an additive that increases electroconductivity (paragraph 15).

**Re claim 7**, Yoshika further discloses that said powdery mixture has a particle diameter of 0.1 to 1000  $\mu\text{m}$  (paragraph 11).

**Re claim 11**, Yoshika discloses an electrode for an electric double layer capacitor, which is obtained by the method as claimed in claim 1 (see discussion above with claim 1).

The applicant is hereby notified that the examiner is treating claim 11 as a "product-by-process" claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985), and also see MPEP 2113).



The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. (See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) and also see MPEP 2113).

Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. (See *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983)).

The structure implied by the method is that of an electrode layer for an electric double layer capacitor, comprising a particulate elastomer and activated carbon. Because the powdery mixture was eventually dried, the final product does not depend on the initial concentration of solids either at the time of mixing or at the time of "dry-forming". Yoshika discloses these features as described above with claim 1.

**Re claim 12**, Yoshika discloses an electric double layer capacitor (paragraph 2), comprising the electrode as claimed in claim 11 (see discussion of claims 1 and 11, above).

The applicant is hereby notified that the examiner is treating claim 12 as a "product-by-process" claim. Even though product-by-process claims are limited by and

defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985), and also see MPEP 2113).

The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. (See, e.g., *In re Garner*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) and also see MPEP 2113).

Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. (See *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983)).

The structure implied by the method is that of an electrode layer for an electric double layer capacitor, comprising a particulate elastomer and activated carbon. Because the powdery mixture was eventually dried, the final product does not depend on the initial concentration of solids either at the time of mixing or at the time of "dry-forming". Yoshika discloses these features as described above with claim 1.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshika, as applied to claims 1 and 4, above, and further in view of US 6,258,337 B1 ("Sonobe").

**Re claim 5**, Yoshika discloses the limitations of claim 4, as discussed above, but fails to further disclose a step of causing the electroconductivity additive to adhere onto a surface of said active material by mechanochemical treatment.

Sonobe discloses a step of causing the electroconductivity additive to adhere onto the surface of the active material by mechanochemical treatment (kneading, column 7, line 67; this mechanical external force is a compressive or shearing force, as described in the applicant's specification on page 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the kneading of Sonobe to the invention of Yoshika.

The motivation to do so is that the combination produces the predictable results of adding an electroconductivity increasing additive, and mixing it, thus increasing the conductivity (column 5, line 14) of the mixture.

**Re claim 6**, Yoshika discloses the limitations of claim 1, as discussed above, but fails to further disclose that the powdery mixture is a mixture obtained by fluidized bed granulation or fluidized bed multifunction mode granulation.

Sonobe discloses that the powdery mixture is a mixture obtained by fluidized bed granulation or fluidized bed multifunction mode granulation (column 7, line 1-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the fluidized bed granulation of Sonobe to the invention of Yoshika.

The motivation to do so is that the combination produces the predictable results of pulverizing the carbonaceous material to particles of about 30 micrometers (column 7, line 29).

7. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshika, as applied to claim 1, above, and further in view of US 2001/0051300 A1 ("Moriguchi").

**Re claim 8**, Yoshika discloses the limitations of claim 1, as discussed above, and further discloses that the dry-forming is press-molding ("rolling" a material, see paragraph 17, requires "pressing" it into shape, so it appears that this is a type of "press-molding").

In any case, Moriguchi discloses forming an electrode by using a carbonaceous powder by a dry-forming process, wherein the dry-forming is press-molding (paragraphs 110-111).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the mold containing an electrode of Moriguchi to the invention of Yoshika.

The motivation to do so is that the combination produces the predictable results of molding the powder to affix it to a metal foil current collector (paragraphs 110-111).

**Re claim 9**, Yoshika fails to further disclose that the press-molding is performed inside a mold wherein a current collector is set.

Moriguchi discloses that the press-molding is performed inside a mold wherein a current collector is set (paragraphs 110-111).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the mold containing an electrode of Moriguchi to the invention of Yoshika.

The motivation to do so is that the combination produces the predictable results of molding the powder to affix it to a metal foil current collector (paragraphs 110-111).

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-2, 4-9, and 11-12 have been considered but are moot in view of the new ground(s) of rejection.

9. The claims are not allowable, in light of the translation of the Japanese action for application JP-2005-511154, and in light of the translation of JP-11-162794, that were filed with the RCE on 1/6/11. The translation of the Japanese office action gives meaning to some of the phrases in the machine-translated version of 11-162794 that are otherwise unclear. For example, it is now understood that "0.5-10 weight-section combination of the binder of this invention is preferably carried out" (see paragraph 16) means "0.5-10 parts by weight of the binder is used" (see translation of Japanese action, first three lines of page 2).

10. The examiner contacted the applicants' attorney, Garth Dahlen, to propose adding the language "wherein the binder excludes an acrylic ester", which would rise above the Japanese reference because it teaches (see paragraph 5) that this ester is a part (c) of the binder, and is preferred to be 12-35% of the weight of the binder, and if it is below 10%, the binder's elasticity and intensity of coating are inferior. This appears to have support in the applicant's specification, because in paragraph 60 of the published application 10/562554, the ingredients of the binder are only a carboxyl-modified styrene/butadiene copolymer, whereas in a different embodiment, in paragraph 66, instead of using the styrene/butadiene, they use a dispersion having methacrylic acid and similar components of a copolymer. The applicants rejected this language on 1/21/11.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Parendo, whose can be contacted by phone at (571) 270-5030 or directly by fax at (571) 270-6030. The examiner can normally be reached on Mon.-Thurs. and alternate Fridays from 7 a.m. - 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571) 272-1907. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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